Personalized Marketing using Machine Learning for Retail

Predictive Analytics & Optimisation

Predict Events Using Machine Learning & Artificial Intelligence

Predict Business Outcomes

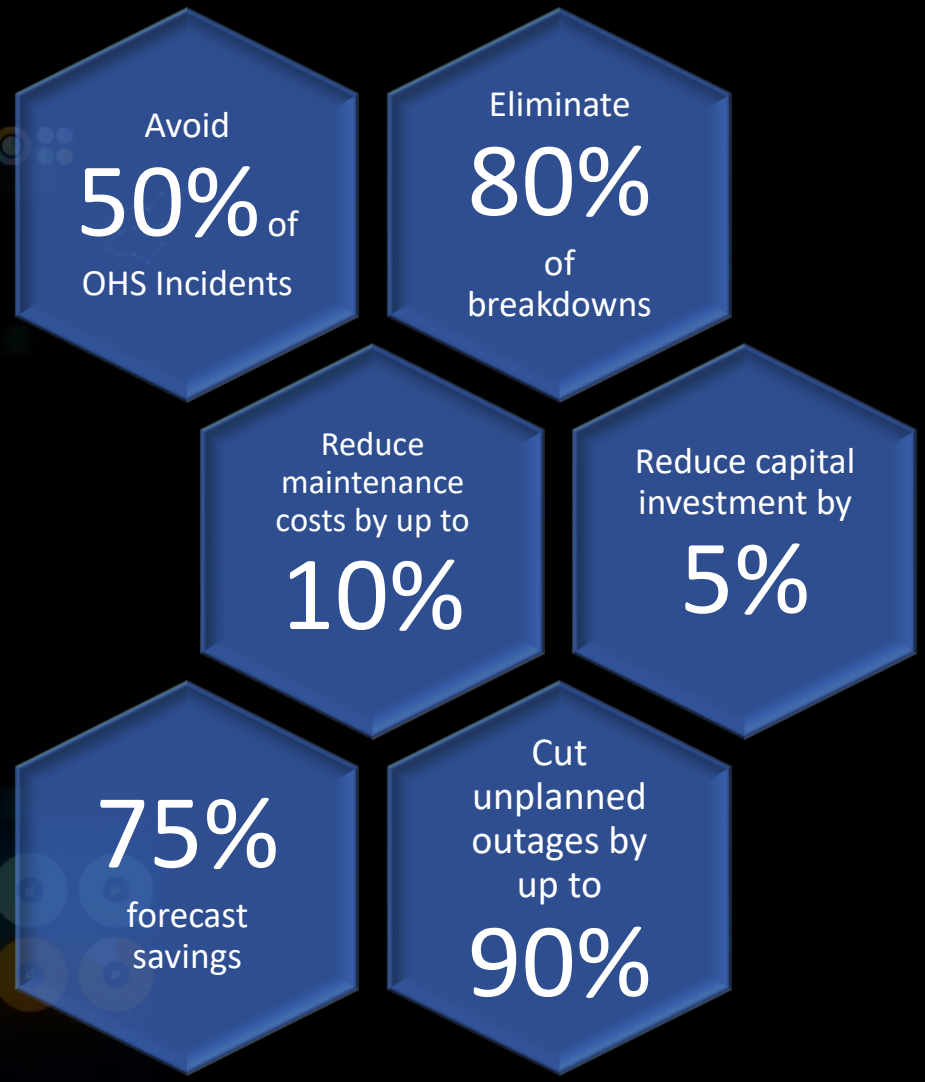
- Sales & Expenditure Forecasting
- Next Best Action and ML-based Marketing Personalisation
- Staff and Resource Optimisation

Predict Incidents

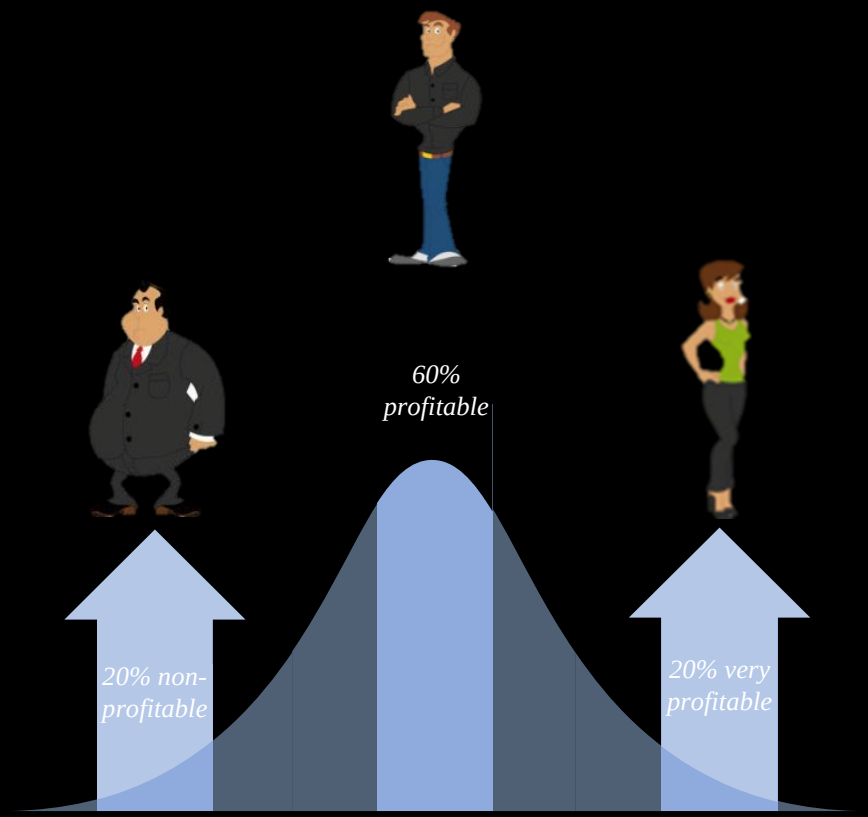
- Predict OHS Incidents by combining incident history with environmental variables and staff activities
- Machine-Learning-Based Dynamic Employee Risk Profiles

Asset Monitoring and Optimisation

- Asset/Process Failure (Condition Based Monitoring) and Critical Control Monitoring
- Downtime Prediction and Prevention
- Optimise Plant and Machinery to Increase Throughput and Reduce Running Costs



Data-Driven Customer Personas (unsupervised ML segmentation) is vital to understand new clusters of customers and what motivates them



Understand how to **cross-sell, up-sell and retain** by conducting workshops based on a deep understanding of the statistics and data to create Customer Personas. Some examples might include:

- **Renee the Regular Renovator**
  - Constantly completing small renovations around the house.
  - Spends between $500 and $750 per month.
  - Purchases low-end, fit for purpose tools.
  - Usually only visits on the weekend.
- **Eddie the Electrician**
  - Visits 2-3 times a week and spends between $5,000 and $10,000 per month.
  - Regularly purchases high quality, electrical consumables.
  - Purchases high-end tools for electricians.
  - Makes up 4% of customers and 7.5% of revenue.
- **Darren the Discount Lover**
  - Highly likely to respond to discount offers.
  - Large percentage of purchases are homewares and consumables.
- **Henry the Handyman**
  - Visits almost daily and spends approximately $50 per day on average.
  - Purchases large volumes of low margin consumables.
  - Purchases mid-range tools.
  - Only visits on weekdays.

Predict the needs of home improvement customers (before they do)

Sensational Customer Experience and Increased Sales

Purchase History

74%
Likelihood of purchasing Decking Finish based on previous purchases

45%
Likelihood of purchasing Trimmer Line based on average consumption since Trimmer purchase

86%
Likelihood of purchasing Chlorine based on regularity

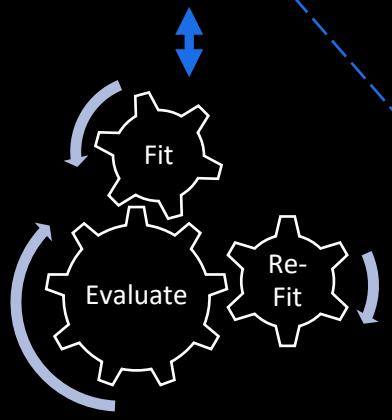
32%
Likelihood of purchasing Lawn Feed based on Lawn ownership and the current season

AI Consulting Group ML Framework

External Data, On-Premise Data, APIs & Other Sources

Ingestion, Cleaning & Transformation

Machine Learning



Operationalisation & Scenario Modelling

Exploratory Data Analysis & Visualisation

Insights
Trends
Seasonality
Business Levers
SME Perspectives

Feature Engineering

Analytics

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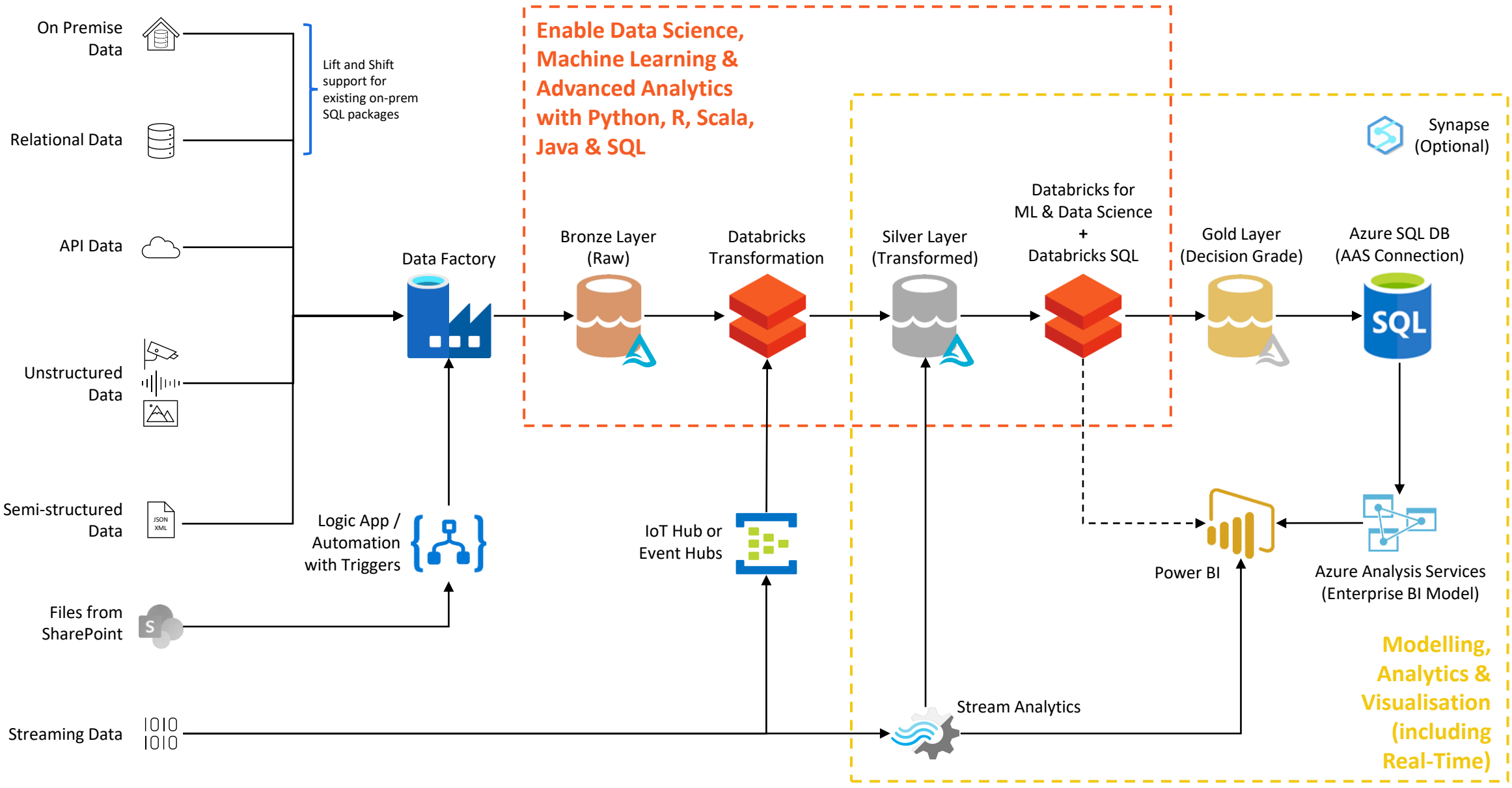
5-Day Data Lakehouse Implementation (Azure EBI)



Agile Delivery for Maximum Business Flexibility

Urgent Feedback and Removal of Blockers

Input from Client Team, SMEs, Executives and Stakeholders

Client Product Owner or Program Manager

Weekly Budget & Progress Status Reporting, Source Control, RAID Registers (Risks, Actions, Issues Decisions), Approvals Register, Peer Review Sign-Off and other Important Feedback

Daily Stand-up Meeting

- What was done in the last 24 hours?
- What will be done in the next 24 hours?
- Any issues and/or blockers?

2-3 Week Sprints

Sprint Reviews

Product Backlog

- Backlog Item 1
- Backlog Item 2
- Backlog Item 3
- Backlog Item 4
- Backlog Item 5
- Backlog Item 6
- Backlog Item 7
- Backlog Item 8
- Backlog Item 9
- Backlog Item 10

Delivery Team

Sprint Planning:
Commitment to Sprint Backlog from Prioritised Product Backlog

Sprint Backlog

- Backlog Item
- Backlog Item
- Backlog Item
- Backlog Item
- Backlog Item

Potentially Shippable Product Increment (Sprint Output)

Improvements, Defects, Bugs and New Ideas

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Our End-to-End Approach

Opportunity Catalogue

Activities:

- Site Walkthroughs
- Data Landscape Maturity Assessment
- Board Priority Identification
- Business Priority Identification
- Operations Research
- Exploration with SMEs
- Top 10 Cost Drivers
- Top 10 Revenue Drivers

Outputs:

- Opportunity Priority List
- Opportunity Roadmap
- Business Case Development
- Architecture Strategy

Design, Build & Test

- Security by Design & AD
- IOT and Edge Considerations
- Platform Adoption
- Provisioning Environments
- Design Workshops
- Define Architectures
- Network Design
- UX Design
- Disaster Recovery
- Process Design
- Application Development
- SME Validation
- Information Flow
- Dev Ops (CI/CD)
- Testing
- Deployment
- Platform Monitoring
- Change Management
- Documentation

AI & Optimisation

- Reporting
- Master Data Management
- KPI Monitoring
- Dashboards
- Stream Analytics
- Text and Sentiment Analytics
- Image Recognition
- Emotion API
- Natural Language Processing
- Voice Analytics
- Video Analytics
- Model Optimisation
- Machine Learning
- Unsupervised Learning
- Reinforcement Learning
- Decision Support
- Recommendation Engines
- Simulations
- Digital Twins
- Autonomous Control
- Physical Automation

Business Transformation

- Return on Investment
- Operational Efficiency
- Additional Revenue
- Reduced Cost
- Increased Customer Satisfaction
- Increased Market Share
- Board & Executive Assurance
- Risk Mitigation